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| APPLICATION NO.       | FILING DATE | FIRST NAMED INVENTOR    | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------|-------------|-------------------------|---------------------|------------------|
| 10/593,734            | 09/20/2006  | Arthur William Galloway | TS6452US            | 5629             |
| 23632                 | 7590        | 04/10/2008              | EXAMINER            |                  |
| SHELL OIL COMPANY     |             |                         | HARCOURT, BRAD      |                  |
| P O BOX 2463          |             |                         |                     |                  |
| HOUSTON, TX 772522463 |             |                         | ART UNIT            | PAPER NUMBER     |
|                       |             |                         | 3676                |                  |
|                       |             |                         | MAIL DATE           | DELIVERY MODE    |
|                       |             |                         | 04/10/2008          | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |                     |
|------------------------------|------------------------|---------------------|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|                              | 10/593,734             | GALLOWAY ET AL.     |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |
|                              | Brad Harcourt          | 3676                |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-15 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_ is/are allowed.  
 6) Claim(s) 1-15 is/are rejected.  
 7) Claim(s) \_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 9/20/2006.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The preamble of the claims requires a method, but no method steps are included in the claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US Patent No. 5,004,007) in view of Amani (US Patent No. 4,901,798).

Johnson discloses an injection valve comprising a tubular valve housing 12 comprising a flow passage 14 a flapper type valve body 24 which is pivotally connected to the valve housing 12 and is arranged in the flow passage such that if the valve body is pivoted in the open position the valve body is oriented substantially parallel to the flow passage (Fig. 6) and that if the valve body is pivoted in the closed position the valve body is oriented substantially orthogonal or perpendicular to the flow passage (Fig. 5) and is pressed against a ring shaped valve seat 46, thereby blocking passage of fluids through the flow passage; a valve protection sleeve 39 which is slidably arranged in the flow passage 14 between a first position (Fig. 6) wherein the sleeve 39 extends through the ring-shaped valve seat 28, whilst the valve body 24 is pivoted in the open position

(Fig. 6) thereby protecting the valve seat 46 and valve body 24 against wear by the flux of lift gas or other fluids and a second position (Fig. 5) wherein the sleeve 39 extends through the section of the flow passage 14 upstream of the valve seat 28, whilst the valve body 24 is pivoted in the closed position (Fig. 5); a flow restrictor 22 forming part of the valve protection sleeve 39, which is dimensioned such that the flux of lift gas or other fluids flowing through the flow restrictor creates a pressure difference which induces the sleeve 39 to move towards the first position (Fig. 6); and spring 27 that biases flapper 24 to a closed position.

In reference to claims 2 and 7, Johnson discloses that the sleeve 39 has a tapered section where the outer diameter of the sleeve 39 is gradually reduced downstream direction of the sleeve 39; a first seal surface 46 is upstream of the valve seat 28 and a second seal surface 41 of housing 12 is downstream of the valve seat 28, such that the outer surface of the tapered section of the sleeve 39 is pressed against the inner surface of the sealing surface 41 when the sleeve is in the first position (Fig. 6) thereby providing a fluid tight seal in the annular space between the tapered section of the sleeve 39 and the tubular valve housing 12 when the sleeve 39 is in the first position. Additionally, first seal surface 46 is engaged by the tip of the sleeve 39 while in the second position (Fig. 5) and by the outer diameter of the sleeve 39 while in the first position (Fig. 6).

Johnson discloses all of the limitations of the above claims with the exception of injecting lift gas into a production conduit by disposing a valve in a side pocket of production tubing. Amani discloses a gas lift injection valve and method comprising injecting gas lift fluids from a supply conduit 39 through a valve 30 and into a side pocket of production tubing 104 (Fig. 1). It would have been obvious to a person having ordinary skill in the art at the time of the invention to use the valve of Johnson in view of Amani in a gas lift system to provide a means to provide an efficient way of augmenting a production operation.

While Johnson and Amani both do not disclose flexible seal rings, the examiner takes Official Notice that it is well known in the art to include flexible rubber or elastomer rings on annular seal surfaces. It would have been obvious to a person having ordinary

skill in the art at the time of the invention to include flexible seal rings on the seal surface of Johnson in view of Amani to provide a better seal surface and protect the valve from production or lift fluids.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US Patent No. 5,004,007) in view of Amani (US Patent No. 4,901,798) as applied to claim 13 above, and further in view of Carmody (US Patent No. 4,427,071).

Johnson and Amani disclose all of the limitations of the above claims with the exception of having a flapper with a tilted surface so that a sleeve contacts the point farthest away from the flapper hinge. Carmody discloses a flapper 20 with a tilted surface 22 that engages sleeve 30 at the point farthest away from hinge 14. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have a flapper with a tilted surface on the valve assembly of Johnson in view of Amani and in further view of Carmody to reduce wear on the inner surface of the flapper.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brad Harcourt whose telephone number is (571)272-7303. The examiner can normally be reached on Monday through Friday from 8:30 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer H Gay/  
Supervisory Patent Examiner, Art  
Unit 3676

BH  
4/08/08